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ABSTRACT

Research investigating why learning to teach is difficult is considered, along with examples that illustrate the issues. A Stanford University study sought to understand difficulties in transforming knowledge to teaching. An example is that some literature classes teach social criticism as well as literature. Some novels also deal with typical problems like individuality and personal development issues, and English teachers also have to teach writing and usage as well. Stanford University's teacher education program is developing uses for case studies of teaching in a manner analogous to the ways business and law schools use them. Examples are cited about how learning from experience for teachers is not simple and does not occur automatically. Effective techniques used by teachers of content courses have been cited as sources of learning to teach by student teachers. A program leading to a teaching degree at Stanford University emphasizes observation by undergraduates of effective methods used by their teachers. (SW)

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LEARNING TO TEACH

by Lee S. Shulman

Increasingly, I see in both the press and in some of our discussions what is for me a worrisome tendency. It is a tendency that in some small manner I feel a responsibility for having helped initiate. Within the field of research on teaching and teacher education, one of the small contributions I've been able to make is to reintroduce the study of teaching with a strong emphasis on the disciplinary content of what is being taught. After all, while process is certainly central to our concern as educators, what is being taught is at least as important as how it is taught.

But in the spirit that besets this pendular field called education, we have once again overcompensated. National Endowment for the Humanities Director Lynne Cheney and her much publicized report, "American Memory," is a perfect example of that. Essentially, she and many others are now trying to come up with cures for teacher education that amputate pedagogy altogether. This is a serious mistake.

My colleagues and I have spent a great deal of time over the past several years studying how young men and women become teachers; how they undergo that metamorphosis from being an expert learner to becoming a novice teacher; how they learn to transform what they know into representations and presentations that make sense to other people. A non-trivial task. We have done this by taking these young men and women so seriously that we have, as it were, become Boswells to their Johnsons. We have interviewed them, observed them, followed them, written hundreds, even thousands of pages transcribing our discussions, and we have done intellectual biographies with them.

At the same time, we've also been doing some studies of mature, successful, experienced teachers to try to get a sense of what the finished product looks like when it both survives and flourishes. And, parenthetically, one of the things I like about the kind of work we've done is that, in principle, there is nothing about the methodology or the high tech character of the data gathering that makes it a kind of inquiry that can only be carried out in a research university. In fact, these case studies of people learning to teach exemplify a kind of scholarship that could well be pursued in schools and departments of education all over the country. Not only would it contribute to a now almost totally missing research literature on learning to teach, but it has such an extraordinarily positive impact on those of us who teach teachers.

Lee S. Shulman, professor of education at Stanford University and director of the Carnegie Corporation-supported Teacher Assessment Program, presented this address to the presidents at Spring Hill. It is a truly insightful analysis of the problems inherent in learning to teach.

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The primary purpose of our research is to determine why it is that, of all the professions, learning to teach is so difficult. Let me try to lay out some reasons and give some examples.

Disciplines

One of the first reasons learning to teach is so difficult is because, unlike the other professions where you use the disciplines as a basis for your practice, in teaching the disciplines play a dual role. They are both the basis for practice, and they are *what* you practice. In other words, if I'm a physician and understand anatomy—I've learned well enough not to confuse the aorta with the superior vena cava—I'm OK. If I'm a teacher of anatomy, that's not enough. I've got to understand it enough to explain it to somebody else. So the disciplines are not only the grounds for practice, they are a big chunk of what the practice is about. And it is much more difficult to teach somebody something than merely to know that something.

Let me give you an example. In one of the studies we did at Stanford, we were trying to understand what some of the difficult things were that somebody transformed from knowing to teaching.

Imagine now a typical eleventh grade English class. The curriculum for the year is made up of a series of books, short stories, plays, and poems, including *To Kill a Mockingbird, Huckleberry Finn, 1984, Gentleman's Agreement,* and others.

If you look through this list it strikes you that all of the readings deal with a very similar theme—the struggle of the individual seeking autonomy or liberty in the face of a somewhat restrictive society. Then you start studying the teacher in that classroom and you realize the incredible agenda that teacher is trying to pursue in that course. The teacher is trying to teach the reading of literary text, no small challenge. The teacher is trying to teach what is, in effect, a course in social criti-

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cism. *1984* is more than a literary text. *Huck Finn* is more than a literary text. *To Kill a Mockingbird* is a very critical text with regard to the society that it describes. So, in addition to having to be able to teach the literature, the teacher is teaching social criticism and social analysis.

Then we look at the list in another way. Almost all of them deal with what is the prevailing problem in the lives of typical American teenagers—namely their own sense of individuality and freedom in a society they find restrictive. So it is also a course in individual development for adolescents. And, by the by, the teacher has to teach them writing and usage as well. High school teachers have to do that five different times daily with five different groups of thirty to thirty-five kids, so at the end of the day they've done this with an aggregate of 170 kids, all of whose names they are supposed to know by the end of the first week.

And the beef about English teachers is that they don't give enough writing assignments? How could they?

Now let's take a small piece of that big picture. How do you teach somebody to read *To Kill a Mockingbird*? If you've been an English major, and just about every secondary English teacher in the country was an English major not an education major, one of the first things you do is ask the students the question, "OK, you've read this book, what is the theme?" If you don't know what the theme is, what are you going to discuss?

George, one of the teachers we were studying, went in to class and asked "What's the theme of this book?" And they told him what the story was about. They didn't know what a theme was. So George gave them the definition of a theme. No luck. He tried analogies, metaphors, examples. Still no luck.

There is no question that George knew what a theme was. But it's a very subtle concept and he really struggled with trying to figure out how to teach it to a group of eleventh graders.

One of the things we're doing in our teacher education program is to develop uses for case studies of teaching in a manner analogous to the ways in which business and law schools use them. Brian, a student in the methods course in the teaching of English, read the case about George and his unsuccessful attempts to teach theme and really got down on George. Four months later, in Brian's own course, he started trying to teach his students what a theme was. In the debriefing after the third day, he walked in, dropped into a chair, looked at his supervisor, and said, "My God, I'm George!"

Again, the point here is that one of the reasons learning to teach is so difficult is that teaching is simply far more than telling what you know. Teaching takes practice. It takes feedback. It takes instruction.

Observation

A second reason it is so difficult to learn to teach, is that, unlike many other professions, people who learn to teach learn it after having completed, in Dan Lortie's phrase, a seventeen-year "apprenticeship of observation." They have spent seventeen years, more or less, and nearly 20,000 hours as observers of teaching and they've learned an enormous amount about it. And now you've got a relatively few number of hours, often to try to overcome the accumulation of models of teaching that they have so assiduously, and often emotionally, observed.

What that means is, to the

extent that we in the university have any control over the kinds of models they get, we must recognize that the teacher of Shakespeare in the English department may be having a more profound impact on how the future teacher of Shakespeare will teach in the high school, than the English methods professor is having in the brief period in which they might discuss the teaching of Shakespeare. I don't want to emphasize this too strongly, because I think that we who prepare teachers can do some very powerful things if we can surface the underlying preconceptions students have. But it would be so much easier if we didn't have to overcome some sort of pedagogical immunity first before trying to prepare someone to teach.

Learning from Experience

Another reason learning to teach is difficult, is that much of learning to teach depends on learning from experience, and if there is something we have learned from psychologists it is how very difficult learning from experience is.

The whole idea of learning from experience is: I do something, it doesn't work, so I try something else until I finally find something that does work. It's a kind of thoughtful trial and error, but it's predicated on two assumptions: one, we have reasonably accurate access to what we do, and two, we are reasonably accurate in identifying the consequences of what we do. But it is very difficult to establish those two assumptions.

As part of our research into developing new approaches to teacher assessment, we took over a local school in Palo Alto for a couple of weeks in summer and designed and built an assessment center. We brought in teachers at different levels who came for four days each to go through a whole variety of simulations and exercises that were designed to give a veridical representation of teaching.

One of those exercises required

People learn to teach after having completed a 17-year "apprenticeship of observation."

the teachers to bring in a lesson that they had actually taught. Here's how the rest of the exercise goes: First you go through an interview where you explain to your interviewer what the lesson is about, what its purposes are, and how you plan to teach it. Then we bring in half a dozen kids you've never seen before and you have to teach the lesson to those six kids. Meanwhile, we're videotaping the whole business.

When that's over you go to one room, the kids go to another room, the kids are asked questions like "What was that lesson about? What was the point?" and so on. You get a chance to reflect on the lesson and then we debrief—Here's what I think happened, here is what I would do differently if I had a chance, etc. Then we ask questions: How would you describe your teaching in that class?

One teacher answered that he teaches using the Socratic method—a Socratic dialogue that is interactive and involves the students. Then we looked at the videotape. The teaching followed this pattern: The teacher asks a question . . . no response from the students. So the teacher answers the question. The same pattern continues without interruption. I call this a Socratic monologue. The teacher did not engage in a dialogue, Socratic or otherwise.

That teacher had no sense that he was not teaching in the way he had intended. The reason is fairly straightforward. It's incredibly difficult to maintain one's engagement with a group of students, be there six or thirty-six of them. And one of the things you are not monitoring very well is what you yourself are doing. You're focused on the students. So it's not at all surprising that you lose touch with what you are doing.

But if that's the case, what are you going to learn from experience? Whatever you are going to learn has got to be somewhat distorted because you often begin with an inaccurate notion of what you have done. A major purpose of teacher education is to provide candidates with the wherewithal to monitor their own performance.

What about consequences? It helps to know what the consequences of your teaching are. One of the methods we use in our teacher education program is what we call reciprocal observation. In a course I teach jointly with a philosopher, student-teachers pair up and interview one another about lessons each is going to observe the other teaching. They then go to each other's classrooms, observe the teaching, and take notes on the teaching they have seen. If there is a difference between what you think you were doing and what you were observed to do, you'll find out. After class, the observer interviews two or three kids about what they thought went on in that class. And then there is a final debriefing.

A teacher of physics, who was a wonderful physics student and understands physics very well, was teaching the opening lesson in a unit on mechanics. The lesson dealt with four different conceptions of force and, as described by his observer, it was a beautifully crafted lesson. There was lecture, there was interaction, it was just lovely, highly conceptual. Then we interviewed two students afterwards; each was asked, "What was the class about?" Each student answered, "It was about something called vectors and how to calculate them." What?

Well, you go back and look at the notes taken on the lecture. Of the forty-five minutes of the active teaching that was going on, ten of those minutes were spent on a kind of subordinate clause, as it were, in which the teacher went to

the board and, because he wanted to give the students some language for talking about forces, taught them how to represent forces as arrows with a certain length and a certain direction, called vectors. This was the only time he went to the blackboard; it was, therefore, the only time the students took notes.

What he didn't know as a novice teacher was that there are ways students pick up the cues about what is important and what is not, and in fact what he had seen as a mere example—a kind of technical footnote in his lecture on forces—the students immediately zoomed in on as the core concept being taught.

Had there not been that interview with the students immediately thereafter, neither the observer nor the teacher would have had a clue about what the students had actually learned in that session. While it was a shock, as often these exercises are to our student teachers, they realized how undependable their intuitions can be about what students are learning, and how much more systematically they must gather information from their students about what in fact they are learning.

My purpose in giving these examples is to show how the learning from experience avenue for teachers is not simple—it does not occur automatically or easily. But people can be taught a variety of ways of getting a better fix on what they actually do and on how to tap into the consequences of their actions.

Influence of Past Teachers

One of the things that comes out very clearly in the intellectual biographies of our students is the enormous influence content course teachers have on students' conceptions of teaching. Whether they like it or not, university and college teachers in the disciplines are teacher educators. They are educating future teachers every time they represent their subject in a particular way, every time they either do or do not make the evaluations they conduct compatible with the goals of the instruction in which they engage, every time they present their pedagogy in a particular way.

People can be taught a variety of ways to get a fix on what they do and on how to tap into the consequences of their actions.

An example: you may recall that the first scene of the first act in *Romeo and Juliet* is absolutely filthy, filled with the dirtiest puns. One of our student-teachers was helping the students understand the punning and told them: "Approach the uses of language in the play as Shakespeare's equivalent to special effects in modern movies. We're attuned to the visual, but the people who went to Shakespeare's plays were attuned to the auditory. Many of them couldn't read but they could hear nuances, puns, plays on words. Those were the special effects. Let's see how many special effects we can find."

Then there was another example of somebody who wanted to teach her students to get into the habit of very close reading. So she had them bring in the lyrics of their favorite rock songs and paraphrase them. Now there may not be all that much meaning in the lyrics of rock songs, but this was something the kids had some investment in. They analyzed them very closely and then she said, "OK, now let's take a piece of Shakespeare and see if we can paraphrase that in the same careful way."

In each of those cases, when we asked the student teachers where they learned to do that, the answer was: "That's one of the things that was done in my Shakespeare course. It seemed to work pretty well. So I tried it myself." They are constantly drawing on the exemplars of pedagogy provided by the teacher educators who call themselves professors of English or mathematics or physics.

Students of Teachers

Those are some of the reasons learning to teach is so difficult. But how can we turn what we know into something positive? If we begin with the notion that content teachers are themselves teacher educators, then perhaps one of the ways we can improve the preparation of teachers is to make future teachers much more conscious students of teaching, even when they are still undergraduates.

This is something we are going to try this year with a group of undergraduates who will begin a three-year program leading to a teaching degree at Stanford. In their seminar, we'll ask them to begin to become students of the teaching they get, whether in biology, English, economics, or history, and to begin to try to understand that teaching. I'll be interested to see how my colleagues in the arts and sciences feel about being scrutinized in that way. But I think it is quite reasonable for students who want to be teachers to look at the teaching they are getting as a wonderful opportunity to get smarter about teaching.

What sorts of things should they be looking for? First, they should ask how, if at all, does the teacher or course provide a glimpse of the underlying discipline or field of study? We've had a lot of talk about the importance of disciplinary integrity in the undergraduate preparation of people who are going to be teachers. One sense of disciplinary integrity is: does somebody who is teaching biology have a sense of what biology is? Can that person deal intelligently with questions like, what are the most important concepts in biology? Which are the ones you want to make sure students understand, and which are more

peripheral to the field?

What are the few simple ideas that underlie the complexities of algebra or geometry? Can you help the students see the forest for the trees so they don't get overwhelmed by the volume of the material being taught? We know that so much of our curriculum is coverage of enormous amounts of material. Is the student getting a sense of what the discipline itself looks like, about what the major concepts and their relations are, or is that left for somewhere else in the curriculum? Does the teaching, through its presentation, its discussions, its projects, its assignments, provide a glimpse of how people gain knowledge in a given discipline?

If it's a course in history, is there a sense not only of core ideas in history—the French revolution as a period of great ferment and excitement—but of how the historiography of the French revolution is done. About how historians begin to have those ideas, and what historical evidence looks like, and whether there is controversy among honest men and women who practice in this field, and how those controversies are addressed? Similarly with English: Is Macbeth a good play or a poor play? We've all been taught that Macbeth is a good play. What about a Neil Simon play? How are the standards of taste in a field like English developed? Are the syntax of the field, the rules of evidence in the field, the ways knowledge is developed in the field, reflected at all?

These are the sorts of things that teachers in a field must understand. The teacher is someone who not only tells students what is so, but has to be able to deal with why it is so. Why am I asking you to believe this and not simply dogmatically saying this is a good play and this is a poor one?

Another thing one should look for is: do courses involve the students in a sense of having accomplished something worthwhile? Are the teachers and their courses rigorous, challenging, and demanding? What are the characteristics that make them so?

> All who teach are obliged to think about how they teach, as well as the content of what they teach.

Next: is there anything at all unusual or unconventional about the pedagogy? The answer may be no. It may be that nearly every teacher is teaching in a very conventional way. But I would think about the pedagogy on two levels. First, is the teacher using small groups, bringing inside what is outside the classroom as interactive projects of some sort, or something other than the conventional lecture/recitation method? Second, is there anything unconventional about the way the teacher has transformed or framed or organized the material of the course, so that by juxtaposition of what would otherwise be surprising texts or events or materials he or she has created a pedagogical opportunity that would normally be missed?

For example, I was discussing the teaching of the Declaration of Independence with a group of faculty from both the arts and sciences and education departments at one of the California state universities. A professor of physics said, "Before teaching the Declaration of Independence, I would want to have the students spend some time understanding the logic of physics in a Newtonian perspective." We were puzzled. He explained, "Well, what does it mean to say 'we hold these truths to be self-evident?' What kind of logic is 'self-evident?' I would want my students to look at a piece of physics text, as it were, from that era and a piece of the Declaration of Independence side by side so they could begin to understand that both of them were emerging from a very similar matrix of understanding." This, by the way, was a physics teacher who worked in an inner-city school—not St. Paul's or Milton Academy.

Sometimes the juxtaposition of things, the way you frame and formulate the material, can be just as pedagogically adventurous and powerful as using some method or technique that is unusual but leaving the material in its pristine form. We must be open to alternative conceptions of what we mean by unconventional pedagogy.

Finally, what kind of sense does one get of the affective, motivational, personal, element of the teaching? Does the teacher display a sense of passion behind the teaching? I would distinguish between passion and charisma; some people communicate a deep set of feelings about what they teach that does not necessarily translate itself into the typical notion of a charismatic teacher, though the two may in fact go hand in hand. How, if at all, does the teacher communicate that he or she gives a damn or has deep feelings and considers the subject extremely important. If so, is there some way to teach this quality, or at least to convey its importance?

All our research on learning to teach really revolves around the notion that teaching, that incredibly complex and demanding activity, is the central focus of everything we do in universities and colleges and it ought to be the primary concern for all of us. Currently, only one part of the university—the school of education or department of education—takes the responsibility for preparing people to engage in teaching. But, like it or not, the entire university is a participant in the teacher education process. All who teach are obliged to become more positive and helpful participants in teacher preparation, rather than randomly assigned accessories. And all who teach are obliged to think about how they teach, as well as the content of what they teach. The stakes are too high for us to tolerate anything less. ■